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AN
INAUGURAL DISSERTATION
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SMALL - P O X:

Submitted to the Examination of

THE REV. JOHN EWING, S. S. T. P. PROVOST;

THE TRUSTEES AND MEDICAL PROFESSORS

OF

THE UNIVERSITY OF PENNSYLVANIA,

IN ORDER TO OBTAIN THE DEGREE OF

DOCTOR OF MEDICINE,

ON THE TENTH DAY OF MAY, A. D. 1792.

BY NINIAN MAGRUDER,
OF MONTGOMERY COUNTY, MARYLAND.

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M D C C X C I I .



TO
WILLIAM SHIPPEN, JUN. M. D.

AND

CASPAR WISTAR, M. D.

Professors of Anatomy, Surgery and Midwifery;

BENJAMIN RUSH, M. D.

Professor of the Institutes and Clinical Medicine;

ADAM KUHN, M. D.

Professor of the Theory and Practice of Medicine;

JAMES HUTCHINSON, M. D.

Professor of Chemistry;

AND

SAMUEL POWEL GRIFFITTS, M. D.

*Professor of the Materia Medica and Pharmacy in the University
of Pennsylvania,*

This Dissertation
IS RESPECTFULLY INSCRIBED,
BY THEIR MUCH OBLIGED

AND HUMBLE SERVANT,

N. MAGRUDER.

TO

CHARLES A. BEATTY,

Physician in George Town in the State of Maryland,

This Inaugural Dissertation

IS, ALSO, RESPECTFULLY INSCRIBED,

BY HIS MUCH OBLIGED FRIEND

AND HUMBLE SERVANT,

N. MAGRUDER.

T O

ELISHA C. DICK, M. B.
OF ALEXANDRIA IN THE
STATE OF VIRGINIA.

WORTHY SIR,

IMPRESSED with a grateful sense of the favors which you have conferred upon me in the course of my medical study under your direction, I embrace, with pleasure, this opportunity of publicly acknowledging your friendship, and that I have derived from you considerable improvement in medicine: Be pleased, therefore, to accept of this testimony of my thanks; and permit me to dedicate to you this Inaugural Dissertation.

Believe me to be,

S I R,

With the greatest sincerity,

Your much obliged Friend and Pupil,

N. MAGRUDER.

A N

INAUGURAL DISSERTATION

ON THE

S M A L L - P O X.

Shewing the most proper season of the year for inoculation; the preparations necessary for securing a favorable termination of the disease at each season; and the particular distinctions in the disease, for illustrating a proper administration of remedies.

IN treating of this disease, I shall, in the first place, consider the most proper season of the year for receiving it, by shewing the dispositions to disease, which are produced in the human constitution, from the varied influence of the several seasons; and some of the epidemics peculiar to each of them.

The agreeable vicissitude, by which an intermediate moderate season is always placed between the cold of winter, and the heat of summer, is a means, which Nature has instituted, to guard the human body against the diseases, to which it would be exposed, if it were not thus, gradually, prepared for the succeeding extreme.

But

But the admirable arrangement, by which each season is blended with the preceding one, and, then, by almost imperceptible degrees, assumes the nature of that which follows it, although, it certainly prevents, in a great measure, the destructive effects, which a sudden change from winter to summer, and from summer to winter, would have on the human constitution, does not entirely hinder the seasons, as they succeed each other, from producing changes in our bodies, which dispose them to particular diseases: This is evident from the nature of the epidemics peculiar to the different seasons; which are more regular in many other countries, than in the variable and uncertain climate of this, and its neighbouring states.

Cold is found, by universal experience, to give a disposition to inflammatory disorders, and heat to those which are generally called nervous. During the winter and spring, pleurifies, peripneumonies, inflammatory angina's, rheumatisms, and inflammatory fevers, prevail. Towards the end of summer, and, particularly, in autumn, fevers of a different nature, dysenteries, and putrid ulcerous fore-throats make their appearance.

June, in my opinion, is the most healthy month in the whole year; which is evident from the circumstance, that there is no epidemic peculiar to it; and as the weather of it has no power to dispose the system to any particular kind of diseases; the constitution is, of course, exempted, during the period of that month, from the predisposing power of any preceding season operating upon it; and, as May and July vary but little from it, I consider, these three months as the most healthy season

season of the year. And this opinion, drawn from actual observation, will, unquestionably, derive additional force from the remark, that the weather of these three months is, of all other months of the year, the most steady and unchangeable; and, on that account, suitably adapted to the production of good health. And hence I infer that it is the most proper time for inoculation.

I conceive that some physicians have been hitherto deceived in preparing their patients by the use of the cold regimen, which, instead of extirpating any predisposition in the system, to a disease, has laid a foundation for rendering the attack of the small pox more severe; and, by the imaginary efficacy of this regimen, the cold seasons of winter and spring have been preferred to the more invariable and temperate weather of the three months before mentioned. In my opinion. the first summer month is a time when the excitement and excitability of the system keep pace with each other, and rest in an intermediate and healthy state, between inflammatory diseases, and those of debility. But it is universally allowed, that in proportion as we approach to the end of Autumn the more the system is disposed to diseases of debility; and on the other hand, in proportion as the spring approaches so is the system disposed to diseases of an inflammatory nature.

This predisposition in the system, whether produced by season, or any other cause, I consider, only as a disease, in its latent state; the nature of which is determined by the nature of the predisposition acted on by the exciting cause: For instance, the virus of the small pox, when taken into the system, is, by its specific power, an exciting

citing cause of the disease that follows; and in the degree or proportion that this predisposition is allied to diseases of the sthenic, or asthenic nature, so is the nature of the small pox determined. But when it is taken by inoculation, a violent disease may almost always be obviated, either, by the choice of a healthy season, or a preparative course suitable to the nature of the season or predisposition in the system; and this I shall now proceed to consider: But as inoculation is generally performed previously to the adoption of a preparative regimen, I shall first make a few remarks upon that operation.

The methods of communicating the small pox have been different in different ages, as well as in the present; but I conceive the most eligible one is to immerse the point of a sharp lancet in the contagious matter; and, introduce it under the skin, in the left arm, by making a small oblique puncture, with the side, or broad part of the lancet, next to the skin, so as just to cause the appearance of blood; then rub the lancet on and in the direction of the puncture, and afterwards press on it, with the blade of the lancet, with the intention to close it, which in some measure prevents the discharge of blood, that probably might wash out the infection. I have preferred the left arm for this purpose, because it is generally least used, and if it should be attacked with inflammation, would be attended with less inconvenience than the right arm, or almost any other part of the body. Matter, dried on small pieces of glass, or polished ivory, and, defended against heat and moisture, by being inclosed in an ivory box, or a common snuff box, is the most convenient way of keeping it, and may, in this manner, be preserv-
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ed for a considerable length of time fit for use. When wanted for the purpose of inoculation it may be moistened with a little cold water.

Having made these remarks I proceed, as I proposed, to consider the preparative course before mentioned, and the precautions necessary to be observed from the time of inoculation until the approach of the fever of the small pox.—And with regard to this the patient should avoid all the predisposing causes of fever.

Different medical writers have given the public a list of the remote causes of fever, in which is included almost every thing that can disorder the human body, viz. full diet, thin watery diet, too great exercise, drinking cold watery liquors when the body is hot, and spirituous liquors whether the body be hot or cold, plethora, hemorrhages, stopping of issues, and other evacuations, the retention of excrementitious or other offensive matter in the stomach and bowels, cold dry winds, moist weather, change of climate, night-watching, intense thought, venery, fear, grief, anxiety, the miasmata or certain particles floating in the air, and which arise from marshy grounds acted upon by heat, and the effluvia that flows from living human bodies pent up or confined from being diffused in the atmosphere.

But, it is evident, that the greatest number of them may be called predisposing causes, from having only a tendency to predispose the body, to be more powerfully affected by some succeeding disease; such, for example, as the small pox. And this disease may be rendered more violent, by the predisposing causes above enumerated. I shall consider only a few of them, but the greatest part may be, naturally enough, included under the observations which I shall now make.

In tracing the annals of medicine we find that many doctrines, which were once supported by

men of the highest medical authority, are now exploded and proved to be erroneous; with such examples before me, whatever may be the determination of the multitude, I think I may, here, without censure, express the conviction of my own opinion, that the practice of the cold regimen as it now prevails, and has obtained in this disease, is grounded upon erroneous doctrine. It may serve to elucidate this opinion to observe, that when the small pox made its first appearance, the hot regimen, was, I believe, universally practised. Experience, however, and philosophical investigations of truth, afterwards discovered this plan of treatment to be pregnant with the most deleterious effects; and, with reason, dictated a different remedy. This remedy was then sought for in a directly opposite extreme. The cold regimen was adopted, in all its unlimited extent, not only in the disease itself, but, even during the preparative course. Here the common adage, that one extreme begets another, was remarkably exemplified—For my part I am of opinion that either extreme is equally improper in preparing a patient for this disease; and I shall treat of them separately as it will lead to explain the advantage of a particular and healthy season, and the preparation necessary for each different season of the year, and

First, From heat predisposing the system to be affected with a fever of debility and the confluent small pox in a direct manner.

Secondly, From cold predisposing the system to be affected with a violent inflammatory fever and the confluent small pox in an indirect manner.

The first may be explained by the heat of summer, when gradually and uniformly applied, having a constant tendency to relax and debilitate the human constitution; this appears evident when we observe, that the inhabitants of warm climates are generally more effeminate and less capable of
great

great exertions than those of the moderate and colder; and we also find that the common diseases of warm climates are the reverse of inflammatory. But in our own climate when the heat of summer acts gradually on the body, there can be no doubt but that it tends to remove from the constitution the inflammatory disposition produced by the cold of the preceeding season, and disposes to diseases of a contrary nature; and the nearer the end of autumn approaches, the more this disposition is increased, in some constitutions than in others. And if we should unfortunately be forced to inoculate at this season, we should not only keep the patient out of the sun, and moderately cool; but, in debilitated constitutions. give tonics, of which the Peruvian bark is the best, and a generous nourishing diet, to obliterate the predisposing debility and bring the constitution to a more healthy state, which undoubtedly will render the disease milder. The patient should avoid stimulating aliment, such as roasted, fried, and salted meats, alternate and sudden changes from heat to cold, and spirituous liquors. Lenient purges should be given to prevent too great an accumulation of excrementitious matter in the intestines.

There is no doubt but that autumn disposes the body to diseases attended very often with disorders in the stomach, and bowels, and the appearance of a redundancy or acrimonious state of the bile; from this circumstance I infer that in preparing a patient at this season of the year, gentle emetics may sometimes, be very useful.

The second part of my proposition may be explained by observing, that the inhabitants of cold climates are more robust, and capable of greater exertions, than those of warm climates; and also those of our own climate, in consequence of the operation of cold weather, and the gradual approach of spring, increasing the disposition in the system to inflammatory

tory diseases. The preparation of a patient, for the small pox at this season, must, of course, be essentially different from that suited to the autumnal season; for, a debilitating plan is, at this time, indispensably necessary to abate and eradicate the inflammatory diathesis. This intention may be fully answered by the exhibition of purgative medicines or by blood-letting. The liberal or parsimonious use of these remedies ought, however, to be dictated by the predominant symptoms and practiced according to the strength and constitution of the patient. Exposure to extreme cold, and alternate changes from heat to cold, and cold to heat, should be avoided. The patient should also abstain from invigorating and stimulating aliment, and use a light vegetable diet.

But, by inoculating in either of the three months before mentioned, the trouble in a great measure both to the physician and patient, of the use of an invigorating course of preparation in the fall, or the debilitating one in the spring is avoided. And from what has been said, the reason of my opinion, that the month of May, June or July, is the most proper time for inoculation, is sufficiently plain; for, I conceive it would be an act of supererogation to demonstrate the absolute necessity of avoiding the predisposing causes of fever. If the health of the patient should have been previously interrupted by any disease, he should, in that case, be prepared for the small pox by medicines suitable for the cure of the previous disease. And as the temperature of the weather, in May, does not reduce the condition of the body to a healthy point, and as that of July reduces it below it, the constitution, in general, requires, that the preparation in the former month should partake in some measure of that necessary for the spring; and in the latter, of that suited to autumn. Attention should, however, always be paid, to
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the constitution of the patient and the epidemic prevailing at the time of inoculation; for, different constitutions, and other attendant circumstances, require a different preparative treatment, for the same reason that the fevers of the distinct and confluent small pox require different remedies; and it is upon this ground of practice that the mildness of the disease very materially depends.

I have often had occasion to observe, that some physicians have inoculated one part of a family, and postponed the inoculating of the other, until just before the former had taken the fever. Reasoning upon this fact from the principles of analogy, which hold good in all other contagious diseases, and which apply with equal force to the contagion of the small pox, I have been hence led to infer this conclusion, that the continual application of the contagion or remote cause of the disease, I now contemplate, arising from those of a part of a family first inoculated, to those of it who are postponed, as before mentioned, until they are attacked, is an injurious practice and must, unquestionably, in a great degree, with respect to that part of the family so postponed, frustrate all reasonable hopes of the mildness of their impending disease.

Before I leave this part of my subject, I must observe, that the intention which has influenced physicians, whilst preparing a patient, to recommend the use of a repeated and almost continual application of local bathing, with cold water, to the eyes and the part inoculated, to prevent inflammation, is always defeated. Though cold bathing will cure ophthalmia, and diminish inflammation in the place-inoculated, yet, when used as a preventative, it will render the parts more susceptible of it; and for this reason, because the system is disposed to local inflammations from an exposure to, or a partial application of, cold.

I come

I come now to the treatment proper for the disease itself.

There is no doubt, but that the cold of winter, when gradually applied, tends to increase the inflammatory disposition in the body, and the heat of summer, applied in like manner, tends to remove it; but in what particular manner, these effects are produced, is a subject too abstruse for me to determine. I shall rest in the knowledge of the facts, that, in the fall, the body appears to be relaxed and much debilitated; and that the heat of summer, when gradually applied, has a power of relaxing and diminishing, and cold the power of increasing, the tone in the solids of the system. These are incontrovertible facts, and will remain incontestible whilst the excitability of the system, to be acted on by stimuli at every season, continues the same; but without making against this principle, an exception may be admitted in favor of an increase or diminution of the excitability, in a degree proportioned to the quantity of stimuli acting upon it. Nor is it less indubitable, that the continued and regular operation of a certain quantity of them is necessary for life and health. But this principle in the animal œconomy, can only receive the impressions of a certain quantity of stimuli, which are different accordingly as their application is sudden or gradual. And we also know, that the force of action, produced by stimuli, depends on the tone in the solids of the system; and a certain degree of tone in them is necessary for health.

This, and the universal fact, that two equal impressions of a contrary nature do not act by each producing its separate effects on the system at the same time, lead me to hazard an opinion, that the causes that produce most diseases depend on a certain state or tone in the solids, connected with a certain portion of stimulability in the system,

or a certain condition of them in the constitution of the individual, to favor the action of an exciting cause, and render him susceptible of a disease; without which, how much soever he may be exposed to an exciting cause, he will not, at that time, be seized with a disease: If this be true, we may conclude, that all diseases take their origin in the solids and not in the fluids; and thus the various changes of the fluids in diseases, are only in consequence of, or a symptom depending upon a certain condition or disease in the solids.

If these conjectures be true, the antient doctrine, so long reputed orthodox, and so long a subject of controversy amongst physicians, "That a fever is an effort of nature to change or concoct some noxious or morbid matter that is in the constitution, so that it shall either be rendered quite innocent or thrown out of the body," must lose that distinguished claim to consideration which it was thought to deserve; and be contemplated only as an ingenious theoretical disquisition, contradicted, however, by the reason of practical facts. The advocates of this doctrine say, that the small pox is the effect of a morbid matter, of a specific kind, received into the body, and where an eruption takes place in consequence of the fever, which not only deprives the body of the power of ever again receiving it, but clears the constitution of the noxious matter introduced; and hence arose the opinion and improper practice of giving stimulating medicines, according to the common phrase, to force out the pock, which, in my opinion, where such medicines were given, with that intention, often proved an injury. But later experience has proved, that an eruption is not necessary to insure the patient against a future attack; but that the fever obtunds certain sensations of impression in the system, which renders it ever afterwards insensible to the disease. But,
however,

however, an eruption may serve as a criterion by which we can judge of the identity of the disease, and as a consolation to human nature by furnishing the pleasing conviction of being hereafter freed from its insidious attack, and all its attendant anxieties.

The great Doctor Cullen defines the small pox to be a disease arising from contagion of a specific nature, which first produces a fever, and on the third or fourth day thereof, produces an eruption of small red pimples. These are afterwards formed into pustules, containing a matter, which, in the course of eight days from the time of the eruption, is changed into pus. After this the matter dries, and falls off in crusts.

In naming this illustrious author, “* before whom death himself appeared frequently to drop his commission in a combat with his skill”—I pause to contemplate his super eminent merit.—To this luminary of medical science, we are indebted, in a great degree, for the present improved state of physick! I shall adapt his definition, and as my knowledge and observation will not permit me to add to the accuracy of the history of this disease, given by this celebrated author; and as I take it for granted that all medical gentlemen possess his works, I must refer them to his first lines† for an accurate history of the small pox.

This disease comes on with a fever as before mentioned, but of a different nature in different patients; that is to say, it approaches more or less to that of an inflammatory or typhoid appearance. And this fever will accordingly require a different treatment in proportion as it assumes an inflammatory or typhoid nature, which, I shall go on to treat of successively. But in consequence of inoculation, and proper a management of the patient,

* Vide Doctor Rush's Eulogium on Doctor Cullen.

† Vide Doctor Cullen's first lines of the practice of physic.

patient, it almost always appears in a mild inflammatory form, which I shall first consider.

The inflammatory species of this disease comes on generally with all the symptoms of inflammatory fever, in a greater or lesser degree. And when the disease is violent, it is frequently accompanied, besides a full hard pulse and thirst, with a severe pain in the head and back; a fulness in the lungs; frequent inclinations to sleep, with a sudden starting when the patient is just ready to fall a sleep, or has actually gone to sleep, which immediately awakes him; great heat preceded by a sensation of coldness, and frequent chills. The obvious indications of relief here, are to abate the too violent action of the heart, which gives rise to all the other symptoms; and nothing has been discovered since the earliest medical records, which so effectually gives relief in all diseases where the blood is too impetuously propelled, as diminishing its quantity. In doing this, great attention must be paid to the degree of violence of the disease, the sex, age, constitution and occupation* of the patient. The repetition of bleeding should be determined by the continuance of the symptoms and the appearance of the blood.

After diminishing the quantity of blood, the remedy which has the most immediate tendency to give relief in this species of the disease, is to evacuate the intestinal canal; and, therefore, it is highly expedient, soon after bleeding, to give such a purgative as will effectually empty the whole course of them, and remove the irritating power that arises from an accumulation of their excrementitious contents, without occasioning griping; or, otherwise, stimulating the system; and the properest for answering this intention are

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those

* Vide Doctor Currie's historical account of the climate and diseases of the United States of America. Page 42.

those of a cooling nature, and of such the *materia medica* furnishes an ample variety. They also drain the arteries and other vessels which pour their excretions into the cavity of the intestines, and, by this evacuation, diminish the too violent contractions of the heart and impetuosity of the circulation; or, in other words, abate the fever. Costiveness should be obviated through the whole course of the disease, by medicine suitable for that purpose.

There is a certain refrigerant, which is so obvious in giving relief to those who suffer from the heat of fever, that nothing can prevent it from being universally adopted. I have before endeavoured to explain the impropriety of the cold regimen while preparing a patient, but here the obvious advantage, that may arise from it, can be better experienced than described. However, the application of cold should always be uniform and constant.

The quantum of cold, as well as of bleeding and purging, should be regulated in proportion to the violence of the fever, least a too free use of them might suddenly change the nature of the disease, to that of a typhoid.

The most important remedies that can check the career of the inflammatory species of this disease have been mentioned, yet there is no doubt but that all the good effects, expected from them, may be promoted by some of the antimonials, and neutral salts. as nitre, &c.—To these I may add the mild subacid drinks, as lemonade, orange or lemon wheys, barley water, pure water, raspberry or currant jelly dissolved in water, apple tea, balm tea acidulated with lemon juice, and other combinations suited to the patient's taste, to abate the uneasy and irritating sensation of thirst.

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The other, or typhoid species of this disease, comes on with lassitude, an irregular sensation of cold approaching to 'chilness, a pain in the back, a confused pain in the head with delirium; thirst, nausea, and sometimes vomiting; the pulse, though hard and quick, yet is not so strong, full, and equal, as in the inflammatory species, neither is the heat of the body so great, nor does it come on so suddenly.

This species appears to be of a mixed nature, and to rest in an intermediate state between synocha and typhus, and which may be called a connecting link between those two fevers. This I infer to be the case, by the symptoms before mentioned, forbidding the use of stimulants. by its perfidious nature, after displaying a likeness to the former, is apt suddenly to assume the appearance of the latter, and by a moderate bleeding instead of producing the good effects which we might probably expect, not unfrequently occasions a sudden and dangerous degree of weakness.

If it be difficult to point out a regular plan of treatment in diseases whose indications are more uniform, it must be still more difficult in this species of fever, whose middle nature announces it to be a disease both of the arterial and nervous system. And as debilitating remedies are beneficial in diseases of the arterial system and hurtful in the nervous, one of the most important points is to decide on a plan of treatment proper for this species of the small pox. Here I must coincide with what Doctor Rush observed in his last course of lectures, on this species of diseases, in repeating, that the best we can do, is to do nothing at all, but watch the change that is apt suddenly to take place; to this I will add the alleviation of certain symptoms, which would aggravate the disease.

If we have reason to think, that there is an accumulation of acrimonious matter in the alimentary

mentary canal, it follows, of course, that such an accumulation must aggravate every symptom of the disease; and it cannot be doubted that the throwing of such a load out of the body must have a considerable effect in relieving the oppressed and restless patient. And when there appears to be a tendency to a new accumulation, which may be known by the patient's becoming costive and restless, he should be relieved by clysters or the use of such a mild cathartic as will perform its office easily and without griping. However, the use of purgatives may be objected to, from an apprehension of their diminishing the patient's strength; it must be remembered, that nothing is more exhausting than the heat and restlessness occasioned by an accumulation of acrid fæces and other matter in the bowels. The purgative, therefore, which removes these, proves, in effect, to be a strengthening and not a debilitating remedy; besides, this accumulation is apt to burst forth in a violent diarrhæa,* which might suddenly reduce the patient to a very great degree of weakness, but which may be prevented by a well timed and judicious use of a mild laxative.

It seems obvious, that the alleviation of thirst will relieve an uneasy symptom of this disease. This may be effectually done by drinking the quenching liquids before mentioned, and using the proper aliment for a feverish and capricious stomach, such as all sorts of mild juicy ripe fruits: These spread a refreshing moisture over the parched tongue and throat of the languid patient, and soothe the ardor of his thirst; besides which they have also a tendency to keep the bowels open.

With regard to the propriety of the use of the cold regimen in the typhoid small pox, It will, I expect,

* And, in my opinion, the diarrhæa that sometimes attends this disease, often arises in this manner.

expect, by every unprejudiced mind, be thought injurious, except as to the meer application of fresh air, and this is self-evident essential to the well doing and recovery of the patient. And with regard to the propriety of a free ventilation, it is beyond all contradiction proved, by observing the benefit which arises from its manifestly salutary effects in other contagious diseases of debility.

I come now to consider the most important part of the treatment for a typhoid fever of the small pox, which is, to watch the change that is apt suddenly to take place. And if this fever is left to itself, it not unfrequently approaches more or less before the eruption to a typhus;* which will afterwards continue to increase with unrelenting assiduity, and soon reduce the patient to an irrecoverable situation. This typhoid fever never fails to usher in a confluent eruption, with more or less malignity, in proportion as it has, at that time, assumed more or less of a typhus nature, which may be interrupted in its career by a well timed and judicious use of the Peruvian bark.

When this disease comes on with a typhoid fever, as I have before observed, the confluent
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* A typhus is a fever that affects the nervous system; though, indeed, every fever affects it in some measure, because a fever occasions a general disturbance of the whole animal œconomy, of which the nervous system is a part; but in this particular fever called typhus, the nervous system is more particularly and violently affected than in other fevers. And it is distinguished by being accompanied with a prostration of strength and debility of the whole system; the pulse varies more than in other fevers, both in point of quickness and slowness, and strength and weakness; the skin is generally pale, and gives a penetrating heat to those who touch the patient; a heaviness in the head, and tremor in the hands, accompanied with languor and despondency. The malignity and danger of this fever is generally in proportion to the degree of debility, which important circumstance ought constantly to be kept in remembrance.

small pox is produced in a direct manner, and in an indirect manner, when the disease comes on with inflammatory fever, which afterwards degenerates into a typhoid. This opinion is, with me, still more confirmed, when I reflect, that all fevers, after continuing a certain time, without any favorable change, assumes nearly the same appearance;* this induces me to say, that an inflammatory fever first passes to a typhoid, after which it seldom fails to glide on with an augmenting celerity, to the consequences of an approaching typhus.

When the confluent small pox is produced, whether in a direct or indirect manner, there is no distinction necessary to be made, as it requires the same treatment. The natural small pox, in autumn, seldom fails to attack with a typhoid fever, which, in my opinion, sufficiently ascertains the general utility and great advantage of the practice of inoculation, for it is conducive to happiness in lessening the miseries of human nature, not only by affording us the important advantage of a preparation, but the choice of a most convenient time or healthy season for taking the disease.

The time for administering the Peruvian bark must be left entirely to the judicious and prudent practitioner; but from the perfidious nature of this disease to take a sudden change, the bark had better be given too soon than too late; and at any period of the disease, if the patient unexpectedly becomes giddy, feeble, and languid, we should directly have recourse to the bark, as a means to obviate the melancholy train of symptoms, of which a sudden prostration of strength is often the foreboder; but when, in spite of all our efforts, they have taken place, the disease is no longer of a typhoid kind, but has degenerated into a true typhus, putrid or malignant.

When

* Vide Doctor Currie's historical account of the climate and diseases of the United States of America. Page 122.

When the situation of the patient requires the use of bark, the quantity administered must depend on the virulence of the disease; but where the inflammatory diathesis is entirely obliterated, the disease accompanied with great debility, and the eruption puts on a very confluent aspect, the bark may be given from one to two ounces in a day. Wine, by adding to its good effects, is a very good menstruum for it to be given in. However, the use of the bark, in any fever, may, probably, be objected to; but for an explanation of its beneficial effects, I must recommend the reading of Doctor Cleghorn's observations,* who, by practical facts, has verified the propriety of its administration in such cases.

I shall conclude the subject of this dissertation, with some observations on the alleviation of some alarming symptoms, which sometimes accompany the small pox.

The convulsions, that sometimes attend this disease, have caused a great deal of doubt with regard to the remedies proper for their cure; but, from the universal fact, that the cure of all symptomatic affections depends on a cure of their primary disease, it manifestly appears, that the remedies for those convulsions should be different, when they attend the inflammatory or typhoid fever. If convulsions occur in the inflammatory species of this disease, all the remedies that are recommended, for that species, are proper to remove them, particularly exposing the patient to cold; but if they attend the typhoid, all the remedies recommended in that case are proper; but when the nature of this fever appears to ballance on the side of debility, liquid laudanum may be used to alleviate the convulsions, and afford an opportunity

* Vide Doctor George Cleghorn's observations on the epidemical diseases of Minorca.

opportunity to administer the bark, which is a more certain and durable remedy.

Another symptom that sometimes attends this disease, is an inflamed arm; here I consider cold bathing to be the most certain remedy, but ignorance and the usurping opinions of some people, have brought it too generally into use; of this I am convinced, from facts that occurred to me during the last summer, when some, after their arms became sore, made too liberal a use of local bathing of cold water. The consequence was, the inflammation began to vanish, and, at length, their ulcers put on a gangrenous appearance, for which they were obliged to have recourse to stimulating applications, to produce the necessary degree of inflammation for their healing, and for which purpose powdered bark, made moist with water, was very efficacious. If the eyes should appear inflamed, cold bathing* of them may be used, with advantage, and almost a certainty of relieving the inflammation, and preventing the appearance of pock. Although what I have now said of the use of this powerful remedy, may appear paradoxical, when compared with what I have said before, I shall rest satisfied in the hope, that, through the course of my dissertation, I have sufficiently investigated and reconciled the distinctions necessary for its use.

* The effects of cold water may be increased by adding some of the saturnine preparations to it.

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